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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,140	10/16/2001	Anna Giatti	AFL2835US	6221

7590

09/25/2003

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EXAMINER

PHASGE, ARUN S

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,140

Applicant(s)

GIATTI ET AL.

Examiner

Arun S. Phasge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15 and 16, 17 is/are rejected.
- 7) ☐ Claim(s) 11, 12 and 18-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese patent abstract 03-020489.

The Japanese patent discloses the steps of improving the purity of a composition comprising quaternary ammonium hydroxide comprising the steps of providing an electrolysis cell which comprises an anolyte compartment containing an anode, a catholyte compartment containing a cathode, and at least one intermediate compartment, said at least one intermediate compartment being separated from the anolyte and catholyte compartments by cation selective membranes, charging an aqueous solution to the anolyte and catholyte compartments, the catholyte compartment optionally containing the same quaternary ammonium hydroxide to be purified, passing a current through the

electrolysis cell to produce a purified aqueous hydroxide solution in the catholyte compartment and recovering the purified hydroxide solution from the catholyte compartment (see Abstract).

Consequently, since the reference discloses each and every limitation, the claims are anticipated.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 4, 5, 8-10 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Moulton et al. (Moulton), U.S. Patent 6,207,039 B1.

The Moulton patent discloses the steps of improving the purity of a composition comprising quaternary ammonium hydroxide comprising the steps of

providing an electrolysis cell which comprises an anolyte compartment containing an anode, a catholyte compartment containing a cathode, and at least one intermediate compartment, said at least one intermediate compartment being separated from the anolyte and catholyte compartments by cation selective membranes, charging an aqueous solution to the anolyte and catholyte compartments, the catholyte compartment optionally containing the same quaternary ammonium hydroxide to be purified, passing a current through the electrolysis cell to produce a purified aqueous hydroxide solution in the catholyte compartment and recovering the purified hydroxide solution from the catholyte compartment (see figure 6 and claims 1-38). The reference further discloses the same TMAH solution used in the catholyte within the claimed range (see col. 5, line 50 and col. 9, lines 29-40). Moulton further discloses the same types of cation selective membranes, i.e., the perfluorinated membranes (see col. 14, lines 19-55). The patent further teaches the process carried out batchwise (see col. 10, lines 54-56). The reference further discloses the washing of the intermediate compartment with a suitable solvent, since it teaches back-washing and fluidizing (see col. 20, lines 55-66). Moulton discloses the use of a three compartment electrolysis cell (see figure 4A).

Therefore, since the patent discloses each and every limitation, the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese Abstract as applied to claims above.

The Japanese Abstract discloses the purification of a tetraalkylammonium hydroxide (see abstract), does not disclose the tetramethylammonium hydroxide. The reference further does not disclose the same.

The modification to treat a species, i.e., the TMAH, when a genus, i.e., tetraalkylammonium hydroxide is disclosed would have been obvious to one having ordinary skill in the art at the time the invention was made, because it has been well settled that a generic disclosure renders a claimed species *prima facie* obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991).

Furthermore, it has been well settled that modification to concentration, which is a result effective variable to optimize the process is within the skill of the ordinary artisan. Discovery of optimum value of result effective variable in known process is ordinarily within skill of art. *In re Boesch and Slaney* 205 USPQ 215. (CCPA 1980).

The Abstract fails to disclose where the waste solution containing the ammonium hydroxide to be purified comes from. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Japanese patent to use any aqueous solution containing the

ammonium hydroxide, because the reference teaches the use of electrolysis to obtain a purified hydroxide.

Claims 2, 3, 6, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moulton as applied to claims above.

The Moulton patent discloses the use of an ionic compound fed to the anolyte compartment (see col. 10, lines 10-25). The reference does not disclose the use of an acid. However, one having ordinary skill in the art would understand that the inorganic acids claimed are routinely used as ionic compounds in electrolysis cell. Accordingly, this embodiment would have been obvious to one having ordinary skill in the art at the time the invention was made to use the inorganic acid, at the concentration claimed, because the reference discloses the approximate concentration of the ionic compound added to the buffer (anolyte) compartment (see figure 6).

The Moulton patent fails to disclose where the waste solution containing the ammonium hydroxide to be purified comes from. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Moulton patent to use any aqueous solution containing the

ammonium hydroxide, because the reference teaches the use of electrolysis to obtain a purified hydroxide.

Allowable Subject Matter

Claims 11-12, and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record fairly discloses or renders obvious the claimed method of stopping the electrolysis when a pH range is reached in the intermediate compartment. Another allowable limitation is the use of aniline to wash the intermediate compartment followed by the washing with water.

Conclusion

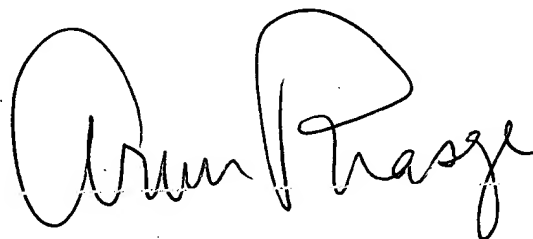
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (703) 308-2528. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax

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phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Arun Phasge'. The signature is fluid and cursive, with the first name 'Arun' and last name 'Phasge' clearly distinguishable.

Arun S. Phasge
Primary Examiner
Art Unit 1753

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